SEROEPIDEMIOLOGICAL SURVEY AND PREVALENCE OF *TRYPANOSOMA CRUZI* INFECTION IN A COMMUNITY-BASED CARDIAC SCREENING INITIATIVE IN FEIRA DE SANTANA, BAHIA

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Chagas disease (CD) remains a significant public health concern in Latin America, contributing to high morbidity and mortality rates. In endemic regions such as Feira de Santana, Bahia, Brazil, Chagas-related mortality represents a substantial component of the local disease burden. This city was selected to participate in the *Every Heartbeat Matter* initiative, which integrates advanced diagnostic technologies, including telehealth-enabled electrocardiography and targeted echocardiographic screening, to improve the detection and management of structural heart disease in underserved populations.

The study enrolled 1,115 low-income individuals attending a health campaign for cardiological exams, of whom 78% (869) were female and 22% (246) male. Among them, 153 underwent blood collection for CD diagnosis, yielding a *T. cruzi* prevalence of 8.5% (13/153). The median age of seropositive individuals was 60 years (IQR: 39–69), with a female-to-male ratio of 5.5:1. Among *T. cruzi*-positive individuals, 10 (79.9%) were aware of their clinical status, while 3 (23.1%) were unaware of their infection.

Multivariate analysis identified household exposure to triatomine insects as the strongest predictor of *T. cruzi* seropositivity, with individuals reporting triatomine presence nearly nine times more likely to test positive (OR = 8.95, $p = 0.003$). No significant associations were observed for other variables, such as prior knowledge of the vector or the presence of a chicken coop, reinforcing the central role of direct vector exposure in transmission dynamics. Additionally, 70% of seropositive individuals were migrants from other endemic areas, highlighting the influence of population mobility on CD epidemiology.

These findings underscore the need to integrate advanced diagnostic tools and vector control strategies into community-based health programs to enhance early detection, reduce disease burden, and inform targeted public health interventions in endemic and underserved regions.

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